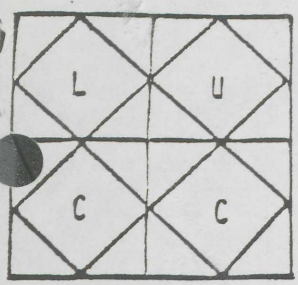
3-1-1984

User Services External Report

Lehigh University



USER SERVICES EXTERNAL REPORT

LEHIGH UNIVERSITY COMPUTING CENTER
CDC CYBER 170 MODEL 730 (CM 256KW, NOS/BE)
DECSYSTEM-2060 (1024KW MEMORY, TOPS-20 V5)
IBM 4331 (DOS/VSE, RELEASE 3)
Vol. XI, No. 5
March 1, 1984

COMPUTING CENTER DIRECTORY

Information About Policies and Plans

Office of the Director	
Director	861-3830
Dr. J. Gary Lutz	
Associate Director	861-3984
William R. Harris	
User Services	
Manager	861-3990
Timothy J. Foley	
Operations	
Manager	861-3989
Carol D. Rauch	

Information About Bills Received

Administrative Associate	861-3825
Joseph P. Holzer	
Annette L. Ruhe	

User Consultants

Blair R. Bernhardt	861-3994
Bob Kendi	861-3992
Monica A. Newman	861-3995
Kevin R. Weiner	861-3991

Information About Programs in the Computer Libraries

Software Librarian	861-3993
Judy K. Allio	

Systems Status. Technical Information

On-duty Consultant	861-4141

General User Information

User Services Secretary	861-3990
Florence M. Gabriel	

Information About Tapes and Supplies

Secretary/Tape Librarian	861-4140
Monica M. Morganello	

On-Campus Computer Access

CYBER 730	(110/300 Baud)	Ext. 4000
	(1200 Baud)	Ext. 4660
DEC 20	(110/300 Baud)	Ext. 4020
	(1200 Baud)	Ext. 4661

Off-Campus Computer Access

CYBER 730	(110/300 Baud)	691-5800
	(1200 Baud)	691-5806
DEC 20	(110/300 Baud)	868-2250
	(1200 Baud)	691-0506

STAFF CHANGES

The Computing Center is pleased to welcome Florence Gabriel who joined the staff as User Services Secretary on January 23rd. She comes to the Computing Center from the Center for Social Research where she had worked as Secretary for the past 1 1/2 years. Florence has a B.A. in Liberal Arts from Temple University.

FROM THE DIRECTOR

by J. Gary Lutz

Security on the DEC 2060 tends to be somewhat straightforward. Your password is the key. If your password is secure, your directory is secure. Lately, there have been a number of unfortunate incidents wherein some person or persons have attempted to trick users into revealing their passwords. The usual modus operandi was to LINK to a given user, pose as a LUCC operator, and request the user's password, (supposedly) in order to be able to resurrect the user after an impending system crash. The user community should understand that under NO circumstances would an operator request a user's password. Do not give your password away, no matter how convincing the plea might be. In addition, please report all such attempts to User Services at extension 3990.

As every CYBER user should now be aware, LUCC will permanently convert from the NOS/BE to the NOS operating system over the Memorial Day weekend. For some, this conversion may be trivial; for others, it will certainly not be trivial. Please take full advantage of NOS's availability before then in order to be prepared to go to NOS in late May. (See the next article for details regarding NOS availability, documentation and seminars.) LUCC will do whatever it can in order to help make this transition a smooth one. We do, however, need to know what your needs are, and that presumes that YOU know what your needs are. This will be best accomplished if you get involved with NOS as early as you possibly can. We will keep you posted on all NOS developments as the semester progresses. I am certain that you will find this conversion well worth the effort.

At long last, the equipment that has been looking for a home in Packard Lab has found at least temporary quarters. The Users' Area in the basement of Packard now houses a number of terminals, some of which are new to LUCC (e.g., Seiko graphics terminals, a Spinwriter). We hope that they were worth the wait and that you can put them to good use. The one issue that still remains to be settled is the fate of this "site" when LUCC leaves Packard Lab in December of this year. LUCC would like very much to leave behind a 24 hour public terminal site when it moves to the new Mart facility. This issue (among many others) is being considered by the Packard Lab Space Committee chaired by Prof. George Kane of the Industrial Engineering Department. If you have any feelings on this matter, please forward them to either Prof. Kane or myself.

* * * ATTENTION ALL CYBER USERS * * *

As you probably know by now, the Computing Center will be replacing the CDC CYBER 730's operating system software, NOS/BE, with a new operating system, NOS. Since the conversion announcement in May, 1983, Center staff members have been busy learning the new system, installing, testing and adapting it during non-production hours, and converting the current applications library. The final conversion to NOS has now been set for the weekend beginning May 25, 1984.

While there are many similarities between NOS/BE and NOS, there are substantial differences which will require user conversion. For users who want to get a head start, especially the ones who have to be up and running the first day, the Computing Center is making available a pre-production NOS system at specified times during the semester. Users are strongly urged to use these times to learn the new system, and to convert and test their existing applications software. There is no charge for usage of this conversion system; however, system resources for these accounts are limited. Following are the hours of NOS availability until May 23, 1984, as announced on-line in CCNEWS:

Every Wednesday, 7 AM to 10 AM (as of February 15)
Every Saturday, 2 PM to 5 PM (as of February 25)
(Saturday NOS hours may be extended, subject to interruption, from 5 PM until 12 Noon Sunday for NOS development)
Every Friday, 7 AM to 10 AM, beginning March 16 (except April 20)

Normal NOS/BE operations should resume by 10:30 AM following weekday NOS sessions.

Users wishing to take advantage of the NOS conversion system must submit a Request for NOS Conversion Directory, LUCC Form #3. This form, along with a preliminary NOS User's Guide and NOS/BE - NOS Differences bulletin, is available from User Services, Room 115 Packard Lab. Files created in a conversion directory will be accessible until June 30th to allow them to be transferred to the user's standard NOS directory.

The final switch from NOS/BE to NOS will begin at 8 PM Friday, May 25th, at which time the CYBER will be taken out of service. All user files will be dumped to tape and then reloaded under NOS. CYBER operations are scheduled to resume no later than 10 AM Tuesday, May 29th. All users will need to apply for a new NOS user name and password in order to access the system beginning May 29th. Details will be available early in May.

A number of NOS seminars will be scheduled during the semester; these will be announced on-line under NOS/BE. NOS reference manuals are available in the usual documentation areas. Users requiring specialized assistance with converting should contact Tim Foley at ext. 3990. Please note that the Center staff will be extremely busy during the next several months, so personal consulting on NOS will be necessarily limited to those users with the most urgent problems.

We would obviously like the conversion to occur as smoothly as possible, so we ask your cooperation and understanding in achieving this goal. We expect that the advantages of running a newer, fully supported operating system will outweigh any difficulties experienced while converting. Please keep an eye out for more information as the conversion nears.

Thesis advisors should be sure to relate the above information to any advisees using the CYBER.

SOFTWARE CURRENTLY AVAILABLE UNDER NOS

LUCC is still in the process of converting and installing software to run under NOS. The FTN and FTN5, Pascal, COBOL5, BASIC and ALGOL compilers and COMPASS assembler are available, and are accessed as they were under NOS/BE. The following is a list of the major applications programs currently available, and instructions on how to access them:

Software Name	How to Access
SPSS	ATTACH,SPSS/UN=LIB.
SIR	ATTACH,SIRV2/UN=LIB. (full system)
	ATTACH,SIRV2ED/UN=LIB. (editor only)
BMDP programs	ATTACH,BMDPxx/UN=LIB.
SUPREM	ATTACH,SUPREM/UN=LIB.
IMSL routines	USE,IMSL4. (with FTN compiler)
	USE,IMSL5. (with FTN5 compiler)

Users needing software that has not yet been converted should contact User Services, ext. 3990.

Users of the SORT/MERGE Version 4 program (called via a "SORTMRG" control statement) should note that only Version 5 of the program is available under NOS. Called with the control statement "SORT5", this version will NOT accept Version 3 or Version 4 directives which were both accepted by Version 4. For your convenience, SORT/MERGE Version 5 has been installed under NOS/BE so that you can begin to convert your jobs now. FORTRAN users with embedded calls to "SORTMRG" within their programs should note that they will need to modify their programs for use with NOS.

ACCESS TO BETHLEHEM STEEL'S IBM 3032 NOW POSSIBLE

Four color-graphics terminals and a color-graphics printer, connected to Homer Research Laboratories' IBM 3032, are currently available at the Drown Hall public computing site (in Room 208). Bethlehem Steel is donating time on the computer to Lehigh, as well as being responsible for the leasing and maintenance of the terminals and printer from IBM. This is part of an experimental exchange of computing services between Bethlehem Steel and LUCC. Bethlehem Steel is particularly interested in having Engineering faculty and students use the system.

Major software available on the system includes ANSYS (a finite element analysis program), DISSPLA and TELL-A-GRAF (graphics programs), and SAS (a statistical analysis program). The FORTRAN (1966 extended and 1977), Pascal, COBOL, APL, LISP and PL/1 programming languages are also available.

Accounts to access the IBM 3032 are opened with Tim Foley, ext. 3990, Room 115 Packard Lab. Since the terminals and printer are not conveniently located to LUCC staff, the Center is not able to provide assistance with their use. Assistance with logging in and using the equipment can be obtained from Dr. James Hall, ext. 4446. Dr. Hall has documentation for using the system, and will be able to provide information on the schedule of computer courses to be offered by Homer Labs.

Bethlehem Steel plans to upgrade the computer to a 3083 over the Easter weekend.

Note that Bethlehem Steel reserves the right to utilize any code developed on its system by Lehigh faculty, staff and students.

FROM THE LIBRARIAN

CYBER 730 - New Software

TEMPLATE - Graphics Subroutine Package (J50071)

TEMPLATE is a sophisticated graphics subroutine package for FORTRAN users; it allows the construction of applications programs having elaborate graphics output. Output may be generated for the CalComp plotter, or any of a variety of available Tektronix-compatible terminals. The many basic functions of TEMPLATE provide the following capabilities:

- 2 and 3D line drawing with perspective or orthographic projection
- selection of numerous line styles
- generation of basic geometric figures, such as arcs, rectangles and generalized conics
- drawing of arbitrary polygons with a variety of filling options
- 2 or 3D text output with a wide selection of standard and special purpose fonts
- creation and manipulation of segments and display list subroutines
- generation of device- and machine-independent output
- coordinate specification in rectangular, polar, spherical or cylindrical form
- redefinition of reference coordinate systems with arbitrary scaling

TEMPLATE also provides these higher-level functions:

- 2 and 3D axis drawing
- business/scientific graphs including bar and pie charts, histograms and scatter diagrams
- surface and contour plots of regular or irregular data

Documentation for TEMPLATE includes the TEMPLATE Reference Manual, Introduction to TEMPLATE, and TEMPLATE Example Set. These manuals are available in the documentation areas of the Packard Lab and Christmas-Saucon sites, as well as being on reserve at Mart Library. These manuals may also be purchased at the Bookstore.

Those wanting to use TEMPLATE subroutines will need to obtain a copy of Technical Bulletin No. 17 - Running TEMPLATE on the CYBER from User Services. This bulletin contains information on how to run programs containing calls to TEMPLATE subroutines, on our system.

A seminar entitled, "Getting Started with the TEMPLATE Subroutine Package", is scheduled to occur on March 6th and 8th, at 4:10 PM in Room 360 Packard Lab. This two-part seminar will provide a brief overview of the facilities available in TEMPLATE, and the information necessary to run TEMPLATE on our system.

CONSULTANT'S CORNER

Q: I have recently acquired a Digital Equipment Corp. VT100 terminal, and am interested in knowing how its function keys "map onto" MUSE commands.

A: Once you have identified your terminal type with the TOPS-20 "TERMINAL VT100" command, the fol-

lowing MUSE commands can be issued from your numeric keypad:

```
CURSOR UP => CURSOR UP KEY
CURSOR DOWN => CURSOR DOWN KEY
CURSOR RIGHT => CURSOR RIGHT KEY
CURSOR LEFT => CURSOR LEFT KEY
NEXT SCREEN => keypad 0
EXECUTE => keypad ENTER
MOVE => keypad PF1
INSERT => keypad 5
FILE => keypad PF3
COPY => keypad PF4
UNDERLINE => keypad 4
ERASE => keypad 1
FORMAT => keypad 6
INDENT => keypad 2
SEARCH => keypad 8
PAGE => keypad 0
GOTO => keypad 3
CANCEL => keypad PF2
LAST SCREEN => keypad .
SUPERSCRIPT  => <ESC> CURSOR UP KEY
SUBSCRIPT    => <ESC> CURSOR DOWN KEY
CENTER => keypad 7
REPLACE => keypad 9
HYPHENATION => keypad -
FAST FORWARD => <ESC> CURSOR RIGHT KEY
FAST REVERSE => <ESC> CURSOR LEFT KEY
```

"Debugging" SPSS Jobs

Presented below are some helpful hints for "debugging" SPSS jobs, with a minimum amount of computer costs. This article was adapted in part from one found in bits and bytes, a newsletter published by the Vanderbilt University Computing Center. Users who find it necessary to queue SPSS jobs for off-hours processing because of system second and/or central memory requirements may find these hints particularly helpful. It is extremely frustrating to find the next day that the job did not run due to some syntax error or, if the job did run, that the results generated were not at all like what was expected.

Using the SPSS EDIT Facility

The SPSS EDIT facility gives the user an opportunity to have the SPSS commands inspected for syntax errors. During an edit run, all variable names referenced in the commands are also checked against the VARIABLE LIST "card", DATA LIST "card", or the input system file variable list to see if they have been defined. Statistical procedures are not actually performed during an edit run, so the run can be performed in a smaller amount of memory than can a "live" processing run. Output from an edit run does include the amount of memory that would be needed for each statistical procedure, where possible.

An edit run is defined by including, as the very first SPSS command in the job, an EDIT control "card". The format of this command is as follows:

```
Col.          Col.
1             16
EDIT
```

Note that the specification field of the statement is blank. SPSS does not read the data on an edit run. In fact, data should not be included within the SPSS control "card" stream as SPSS will treat those records as if they were SPSS commands (and, therefore, report many errors).

The output from an edit run includes a listing of the SPSS commands in the run, and any syntax errors found on those commands. Note that, in almost all instances, SPSS stops processing a command when it encounters a syntax error in that command. Any subsequent errors in the command are not detected. Thus, a user should resubmit the EDIT job as many times as necessary until no more syntax errors are reported.

Note that the EDIT facility basically tests each control "card" as a separate entity and, therefore, does not test the order of the commands in or the completeness of the SPSS job. The output from an edit run would not, for example, inform the user that a permanent data selection "card" had been inserted after the first procedure "card".

Processing a Few Cases and Having SPSS List Their Contents

By processing just a few cases and including a LIST CASES command in the run, you can:

- check the SPSS job for completion
- check that the SPSS commands are in a valid order
- check the correctness of any data format specified in the run (via an INPUT FORMAT or DATA LIST "card")
- check the results of any variable transformations performed in the run (via IF, COMPUTE, etc.)

You can instruct SPSS to process just a few cases by modifying the value specified on the N OF CASES command (or inserting such a command in the run, as this "card" is no longer required on data definition runs). Data for the other cases would have to be removed where they appear within the SPSS control "card" stream. Note that this command can also be used on a run in which a SPSS system file is accessed.

By including a LIST CASES "card" in your run, you can check any data format specifications and the results of any variable transformations. LIST CASES is a feature, not a statistical procedure. Thus,

this command must be immediately followed by a valid procedure command (e.g., CONDESCRIPTIVE) to obtain LIST CASES output (unless it precedes the READ INPUT DATA statement of a data definition run).

Suppose your raw data consisted of three variables - A, B and C - for each case, and that these variables were used to construct a new variable - X - in the run. It would be useful to include the following command:

```
Col.          Col.
1             16
LIST CASES    CASES=5/VARIABLES=SEQNUM A B C X
```

If, according to the LIST CASES output for a particular case, the values of A, B and C were not as you knew them to be, you would need to check your INPUT FORMAT or DATA LIST statement. (Note that, for complete LIST CASES output, a PRINT FORMATS statement would have to be included for alphanumeric variables and variables whose values are not always whole numbers.) SEQNUM is a variable created automatically by SPSS; it contains the case identification number SPSS assigned to each case as it was read (starting with 1).

If the values listed for A, B and C are correct but the value for X is not what you expected, then the IF, COMPUTE, etc. statements need to be closely inspected. Users should read pages 115-121 of the maroon SPSS manual for a thorough discussion of this topic.

Note that runs in which procedures requiring large amounts of memory (such as FACTOR, MANOVA) are specified may not be able to process even a few cases during prime hours. One could only check the syntax of those procedure "cards", using the EDIT facility.

OPERATIONAL STATISTICS

CYBER 730

	12/83	1/84
Time System Available During Scheduled Hours (Percentage)		
Batch	97.9	100.0
INTERCOM	97.8	99.9
Mean Time Between Interruptions (Hours)		
Batch	123.3	347.8
INTERCOM	24.7	347.6

DECSYSTEM-20

	12/83	1/84
Time System Available During Scheduled Hours (Percentage)	98.8	98.7
Mean Time Between Interruptions (Hours)	76.9	37.8

USAGE STATISTICS

CYBER 730

	12/83	1/84
BATCH -		
Jobs Processed	29,616	13,760
Central Site	5,789	6,655
INTERCOM -		
Terminal Sessions	18,016	13,067
Terminal Connect Hours	9,531	5,427
CPU Hours - Batch	149.2	101.4
- INTERCOM	85.0	32.8

DECSYSTEM-20

	12/83	1/84
Terminal Sessions	21,403	15,553
Terminal Connect Hours	9,589	5,880
CPU Hours - All Jobs	192.7	130.1